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Original

Operating Instructions
SCHICK - Milling Machine S1

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1. Range of Applications

The S1 milling machine is intended for use in dental laboratories. It includes a milling arm which is easily moved in three dimensions.

This milling machine can be used for the materials usually employed in dental laboratories, such as waxes, plasters, acrylics, metal etc.

2. General Information

2.1 Ascertain that your mains supply coincides with the data on the rating plate.

2.2 S1 milling machines are not suitable for the following applications:
- in areas where there is a risk of explosion.

2.3 Ensure that all regulatory requirements are observed during use (always wear protective glasses).

2.4 Under no circumstances should the milling machine be cleaned with compressed air.

2.5 To retain the precision of the chuck and prolong ist service life, it must always be fitted with a rotary instrument or the rod supplied with the unit (even when not in use).

2.6 Recycling WEEE-Reg.-Nr. DE 78620387

Caution:
- When using rotary instruments, do not exceed the maximum speeds laid down by their manufacturer.
- repairs and other technical procedures must only be carried out by SCHICK or other suitable qualified personnel, authorized by SCHICK.
- SCHICK do not guarantee the S1 milling machine should it not have been used in accordance with the operating instructions.

3. Setting up / Operating the unit / exchanging the rotary instruments

3.1 Ascertain that your mains supply coincides with the data on the rating plate.

3.2 Plug the unit into a mains socket.

3.3 Operating the unit (compare page 6)
- switch the main supply on (1)
- place the model table (5) on the platform (6)
- turn the eccentric lever (2) - to lock the model table into position
- move switch (3) to set the milling spindle to clockwise or anti-clockwise rotation
- the control knob (4) is used to select (stepless) the rpm.

3.4 Vertical adjustment of the jointed arm
- grip the jointed arm, unlock the knurled knob (12) and position the arm as required. Lock the knurled knob (12)

3.5 Securing the jointed arm in position
- the jointed arm can be locked into place as required by locking or unlocking the clamping levers (9) and (10).

3.6 Working with the vertical rig
- the clamping knob (13) should be unlocked for drilling - by pulling down the motor a vertical movement of the rig can be carried out. The maximum vertical distance of the rig is 24mm. Should the clamping knob (13) be locked whilst the rig is being moved vertically, the milling spindle will be locked at this level. The knurled knob (7) is a depth stop and can be adjusted individually about the metric thread around the same drilling depths to repeat.
- the jointed arm can be moved both horizontally and vertically if clamping levers (9) and (10) are unlocked.

3.7 Tightening the milling spindle of the motor/ exchanging the rotary instrument

! The motor must be switched off before exchanging the rotary instrument !

- turn the chuck lever (8) as far as possible to the right ("open") and insert the instrument.
- turn the chuck lever (8) as far as possible to the left ("close") to tigthen the instrument into place.
- turning the chuck lever (8) approximately half way to the right ("open") prevents the milling spindle rotating yet grips the instrument securely. This position is intended for gripping a trimming instrument.

3. Setting up / Operating the unit / exchanging the rotary instruments

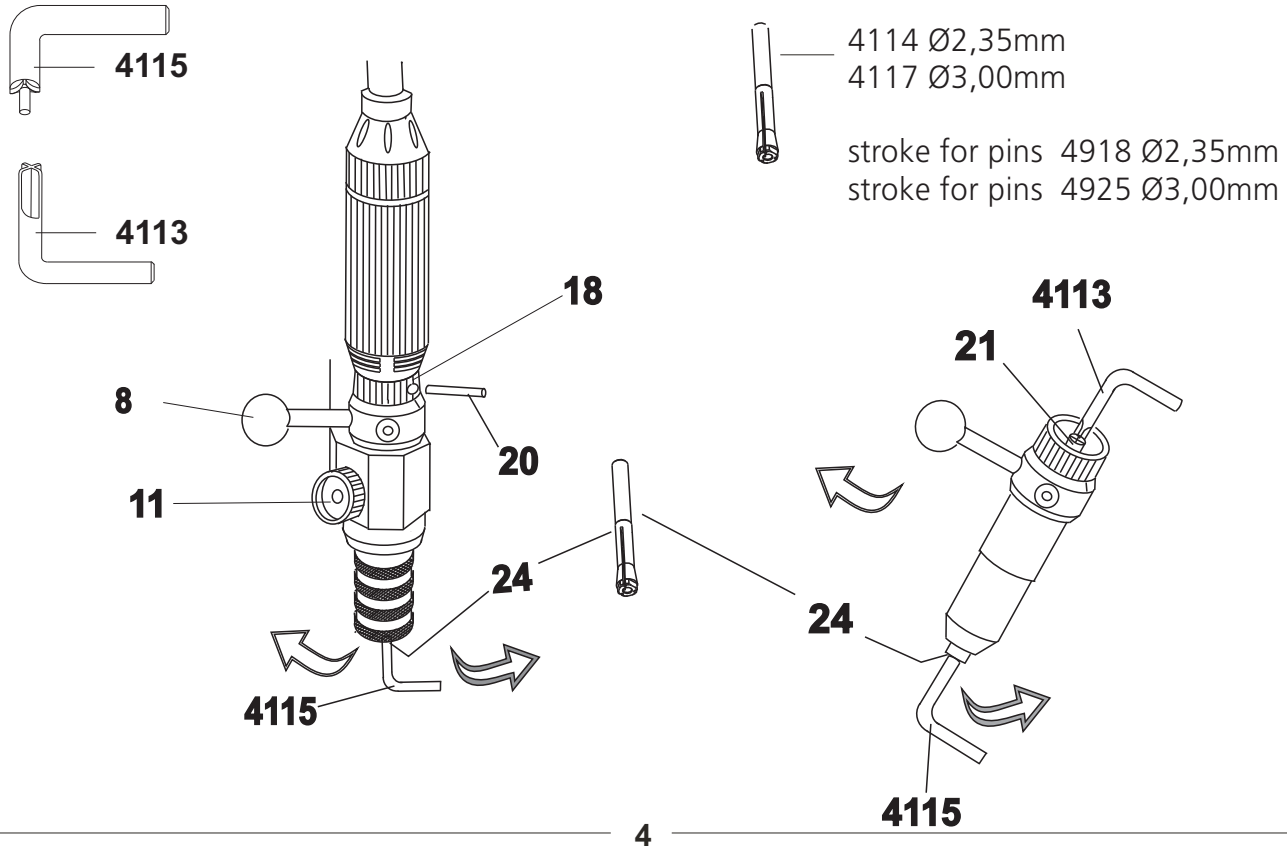
3.8 Surveying spindle
- Unscrew the knurled knob (11)
- Withdraw the milling spindle
- Insert the surveying spindle (17a) or optional (17a) into milling spindle holder and tighten the knurled knob (11)

4. Replacing the chuck

- Unscrew the knurled knob (11)
- Withdraw the milling spindle
- Turn the chuck lever (8) as far as possible to the right ("open")
- Unscrew the union nut (18) completely (if necessary, use a 2,35 mm diameter (20) tungsten carbide cutter shank) and pull the milling spindle off the motor.
- Use a No. 4115 chuck wrench to jerk the chuck (24) anti-clockwise and unscrew it completely. If necessary, hold the tongue (21) (on the motor) with a No. 4113 wrench.

Please note: In the chuck is a stroke for short shafts, this could be removed or replaced as required.

- Grease the chuck (24) lightly and insert it into the shaft. Use the wrenches as described previously to screw the chuck in clockwise. Screw it in as far as possible and then tigthen it slightly.
- Prior to inserting the chuck, clean it and the shaft thoroughly as otherwise the concentricity may be adversely affected.
- Press the milling spindle onto the motor and tighten the union nut (18).
- Insert the milling spindle into the holder and tighten the knurled screw (11)



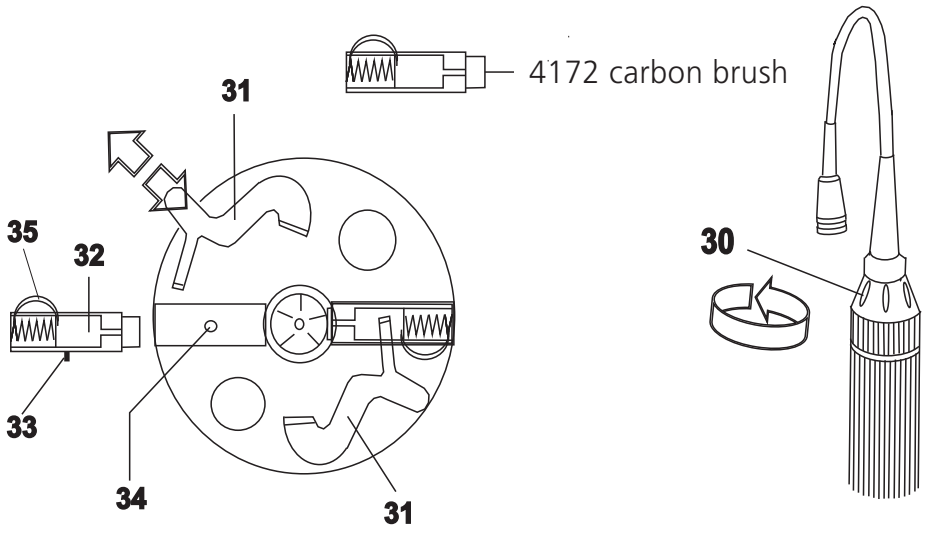
5. Maintenance and Care - Replacing the carbon brushes

Caution: Do not use compressed air to clean the milling spindle !

The chuck should be cleaned and re-greased once in a while, depending on how dirty it is (refer to section 4).

Replacing the Carbon Brushes

- Unscrew the cover (30) from the motor and pull it back
- Pull on the cord to remove the insert
- Use your fingers to rotate the retaining springs (31) as far as possible in the direction of the arrow
- Remove the old carbon brushes
- Insert the new brushes, ensuring that the lugs (33) on the carbon brushes fit into the apertures (34). Do not bend the lugs. The strands (35) of the brushes must remain exposed.
- Use your fingers to rotate the retaining springs (31) as far as possible over the brushes.
- Replace the insert with the cord (can only be fitted in one position)
- Screw the cover (30) back into place, ensuring that the cord does not become twisted



6. Possible faults

Should the milling spindle be overloaded or jammed, for savety reasons the unit switches itself off. To continue operating the unit, switch it “OFF” and “ON” again (switch 1).
Should the unit overheat, the excess-current cut-out on the back of the controller is activated. Once the unit has resumed ist normal working temperature, the pin can be pressed in and the unit will run again at the previously set speed. Should the pin pop out repeatedly whilst the unit is in operation, the unit is defective.
Should the power decrease of the motor run jerkily, check the carbon brushes. If necessary, replace them.

7. Technical data

Technical data S1 Junior

Rated voltage:	230V/ 115V/ 100V
Rated frequenzy:	50/60 Hz
Motor torque:	3,6Ncm
Speedrange:	1.000 - 30.000rpm
Concentricity:	<0,015mm
chuck:	Ø2,35mm series Ø3,0mm on request

Subjet to technical modification
without prior notice

milling machine:

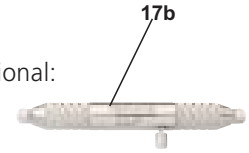
Width:	200mm
Height:	320mm
Depth:	225mm
Weight:	2,5kg

Control unit:

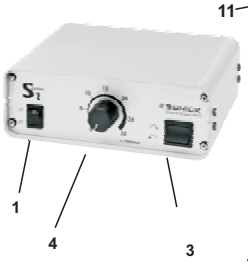
Width:	185mm
Height:	68mm
Depth:	180mm
Weight:	2,5kg

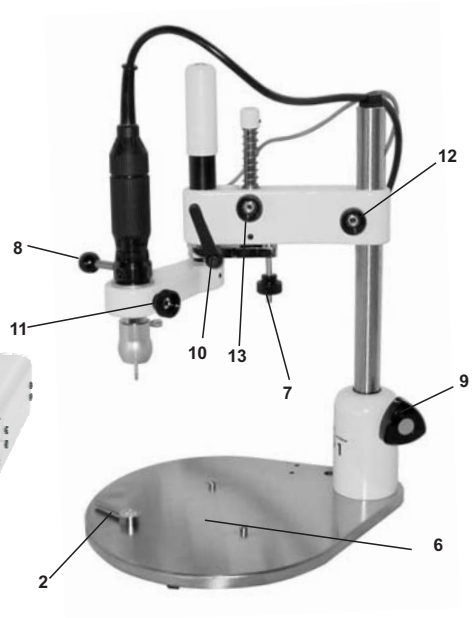
8. SCHICK - Milling machine S1

optional:



Measuring Spindle Art.-Nr. 2250



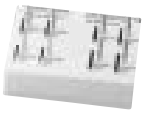


9. Accessory S1

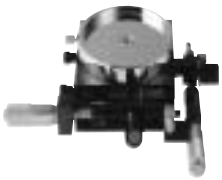
Modeltable Art.-No. 2407/9

Separator Art.-No. 2655

Milling tray Art.-No. 2507



Diamond tool set Turbine 1,6 mm (8 pcs.) Art.-No. 2660



Coordinat table Art.-No. 2505

Light head for turbine Art.-No. 2510/1

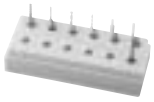
Adaptor ring Art.-No. 2508

Polish set 2,35 mm (3 pcs.) Art.-No. 2665

Adjustable angle Art.-No. 2506

Control for light head Art.-No. 2480

Holding tray Art.-No. 2509



Milling set 2,35 mm (7 pcs) Art.-No. 2530

measuring spindle Art.-No. 2250

light head short Art.-No. 2510/2

Suction tube Art.-No. 2470/5

S1 Wooden Base Art.-No. 2490

Control unit cpl. Art.No 2409/5
control box Art.No. 2406/5
motor with milling spindle complete Art.No. 4100/05

S1 - Ceramic-Milling Set cpl. Art.No. 2650/15
(without S1 Junior and S1 Wooden Base)
turbine Art.No 2640/1
holding clip Art.No. 2245
light head for turbine Art.No 2510/1
control for light head Art.No. 2480
cable for light head Art.No. 2485
suction tube Art.No. 2470/5
separator Art.No. 2655
model table Art.No 2407/9
diamond tool set for turbine 1,6mm (8pcs.) Art.-No. 2660
polish set 2,35mm (3pcs.) Art.-No. 2665

10. Declaration of Conformity

We, SCHICK GmbH
Lehenkreuzweg 12
D-88433 Schemmerhofen

declare herewith, that the product

milling machine S1 2405/5 und 2409/5 CE

is in conformity with the following provisions of Directive:

2001/95/EG	(general product safety)
2006/42/EG	(machinery directive)
2006/95/EG	(low voltage directive)
2004/108/EG	(EMV directive)

Name and adress of person in charge: Wolfgang Schick
Lehenkreuzweg 12
88433 Schemmerhofen

Schemmerhofen, im April 2010

W. Schick
Geschäftsführer

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